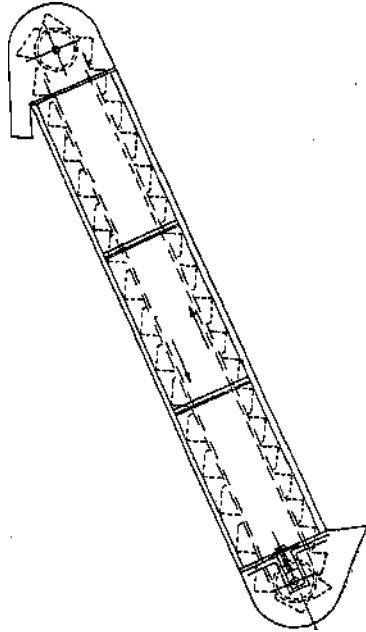


## COAL HANDLING APPARATUS

bunker c, and D is a belt conveyor to distribute the coal to the various bunkers. The elevator and conveyor are driven by motor and reduction gearing at E.

The elevator consists of a steel casing constructed of angles and plates, inside which travels an endless chain to which buckets are secured at intervals, as shown in fig. 9.



The chain runs over an upper or driving sprocket at the top end of the casing, while at the lower end a movable pulley is arranged for maintaining the chain in proper tension. The buckets are provided with skid bars, which slide on angle guides fixed inside the casing. The elevator may be driven by electric motor through worm and chain reduction gearing located near the top of the elevator, as at E in fig. 8. The rate at which coal is fed into the elevator may be

controlled by the slide valve, as at F in fig. 8, at the bottom of the coal-receiving hopper.

The coal-receiving hopper, shown at A in fig. 8, may be constructed of reinforced concrete, which is a cheaper construction than the mild-steel hopper shown in fig. 3.

At the upper end of the elevator the coal is tipped out of the buckets as they pass over the upper sprocket on to a belt conveyor. Alternatively the horizontal conveyor may be of the "tray" type, as

described

Fig. 9.—Bucket Chain Elevator below.

Two types of tray conveyor are manufactured, one known as the tray type, in which a series of flat trays with upturned

sides are attached to side chains, similar to those fitted to gravity bucket conveyors. A typical tray conveyor is shown in fig. 10, from which the main features can be seen. It will be noted that the material conveyed can only be discharged over the end of the conveyor, and it will readily be understood that this type of apparatus is unsuitable for the coal-handling system shown in fig. 8, where the coal has to be distributed at various points along the length of the horizontal conveyor into the bunkers below. The tray type of conveyor can, in certain cases, be used for elevating coal by inclining the casing at an angle of about 30° from the horizontal. In order to prevent the coal running back down the conveyor, each tray is provided with a flange across its lower edge.

In order to distribute coal at various points along the length of the conveyor, to meet the requirements of the case shown in fig. 8, another form of tray conveyor, known as the " tipping tray " type, must be used. An example of a tipping tray conveyor, as manufactured by Messrs. Babcock &